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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,324	02/24/2005	Guy Faucon	1200.715	8340
7590 Longacre & White 6550 Rock Spring Drive Suite 240 Bethesda, MD 20817				
EXAMINER				
RASHID, MAHBUBUR				
ART UNIT		PAPER NUMBER		
3683				
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10/03/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/506,324

**Applicant(s)**

FAUCON ET AL.

**Examiner**

MAHBUBUR RASHID

**Art Unit**

3683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) 12 and 20 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-11 and 13-19 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date 09/02/2004.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election of Species B, drawn to the embodiment of Figures 6-8 in the reply filed on 07/09/2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Information Disclosure Statement***

An information disclosure statement (IDS) was submitted on 09/02/2004. Accordingly, the examiner has considered the information disclosure statement, see attached 1449.

### ***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: *the reference number for the short splined portion as disclosed in claims 6 and 7 is not shown in figure 6 of the elected species*. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: "its" in line 6 – is not clear. Appropriate correction is required.

Claim 4 is objected to because of the following informalities: "its" in line 3 – is not clear. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "The combination" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the rotor" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 1 recites the limitation "the latter" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 4, it is not clear if "an alternate arrangement of axial splines (76) and axial teeth (77)" in line 3 is same the alternate arrangement of axial splines and axial teeth disclosed in claim 1, in line 8. Appropriate correction is required.

Claim 5 recites the limitation "the outside" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 14, "the set of teeth" in line 2 - is not clear. Appropriate correction is required.

Regarding claim 15, "it is only the flanks of the teeth" in line 2 – is not clear. Appropriate correction is required.

Claim 16 recites the limitation "the interference" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 18, "the set of teeth" in line 2 - is not clear. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-6, 9-11, 13-15 and 17-19** are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson et al. (US 5,370,587).

Regarding **claim 1**, discloses the combination of a drive pulley with a rotor (figs. 1-2), comprising: a shaft (figs. 3 and 5) carrying a rotor and a front ball bearing (fig. 12, (88), a pulley (figs. 6-8, (3)) having a peripheral working zone adapted to cooperate with a drive belt (fig. 3, (12) and (14)), together with a central hub (fig. 6, (16)) having an axial hole (18) characterized in that the pulley includes a splined inner portion (71 and 72) for the attachment on a complementary splined outer portion (figs. 3 and 5, (7)) of the shaft (5) of the rotor, a latter having on its outer periphery an alternate arrangement of axial splines (7) and axial teeth (7) (col. 4, lines 53-58).

**Re-claim 2**, see a transverse shoulder (fig. 8, (10)) and an inner race of the ball bearing (fig. 12, (88)).

**Re-claim 3**, see an intermediate portion (figs. 3 and 5, (5)) which is extended in length by a smooth cylindrical surface.

**Re-claim 4**, see the smooth cylindrical surface (figs. 3 and 5, (5)), a splined external free end portion (7) and the alternate arrangement of axial splines (7) and axial teeth (7) (col. 4, lines 53-58 and col. 5, lines 24-30 and 38-51).

**Re-claim 5**, see the splined external free end portion is stepped (figs. 3 and 5, (7); see also col. 5, lines 24-30 and 38-51).

**Re-claim 6**, see the splined external free end portion includes a short portion which includes teeth (figs. 3 and 5, (7); see also col. 4, lines 53-58).

**Re-claim 9**, see a pilot end (figs. 3 and 5, (11)) of the free front end of the shaft (5).

**Re-claim 10**, see the pilot end (11) configuration comprises a chamfer (please figs. 3 and 5).

**Re-claim 11**, see the outer diameter of the pilot end (11) and the inner diameter of a set of teeth (72) on the pulley (3).

**Re-claim 13**, see the splined internal portion (fig. 6, (16), (72) and (71)).

**Re-claim 14**, see a set of teeth (fig. 6, (72); see also col. 5, lines 24-30).

**Re-claim 15**, see the flanks of the teeth (72 and 7; see also col. 5, lines 24-30 and 38-51) of both the shaft (5) and the pulley (3).

**Re-claim 17**, see an axial locating device (74).

**Re-claims 18**, see a cutting edge of the shaft (7) and a smooth annular hub of the pulley (16).

**Re-claim 19**, see the shaft (5) (see also col. 4, line 51) and the pulley (3) (col. 5, lines 8-10) are formed from material having coefficients of expansion which are close or identical to each other. (Please note that steel and high impact plastic or resin both have characteristic/properties of expansion)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587) in view of Colanzi et al. (US 4,571,227).

Regarding **claim 7**, Johnson discloses the ball bearing, the smooth cylindrical surface and the splined portion as set forth above but fails to disclose the ball bearing to be mounted both on the smooth cylindrical surface and the splined portion. However, Colanzi discloses a belt drive unit (fig. 2) with a ball bearing (2) is mounted both on the smooth cylindrical (fig. 2, please see the area of the shaft (12) where the left side area of the inner race (22) surface of the bearing is contacting) and the splined portion (30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the bearing of Johnson on both the smooth cylindrical surface and the splined portion, because mounting the bearing with such manner will prevent the inner race of the bearing from any unwanted movement while providing more efficient operation of the bearing for the entire system.



**Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587) in view of Nakamura et al. (US 4,617,485) or Bekheet (US4,913,688).

Regarding **claim 8**, Johnson discloses a chamfer of the pilot end as set forth above but does not disclose a chamfer of the free front end teeth portion as claimed. However, Nakamura discloses an alternator with a shaft having teeth portion including a chamfer (fig. 1, (4)) and Bekheet discloses a pulley assembly including a shaft having chamfered sections (fig.1, (12)). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the free front end of the teeth (7) of Johnson with a chamfer as taught by Nakamura and/or Bekheet, because having the end of the teeth portion of the shaft chamfered will prevent from chipping of the edges of the teeth during fitting of the elements on the shaft while making the fitting process easier.

**Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson et al. (US 5,370,587).

Regarding **claim 16**, Johnson does not disclose interference in the range between 50 and 200 microns. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to determine an optimum range of the interference via routine experimentation in order to improve on more positive fitting between the pulley and the shaft

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAHBUBUR RASHID whose telephone number is (571)272-7218. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mhr

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